Day 1
01/09/2020

ANGULAR

frontend Development

HTML
CSS
JavaScript
Angular

Backend Development

API's
Database

frontend - presentation logic
middle - business logic
backend - persistance logic

What is Angular?

It is a frame work for building client application using html, css, mainly used for single page application.

Why Angular?

- follows modular approach
- gives your application clean structure
- It gives loosely couple structure that is easy to understand and easy to code.
- It includes a lot of reusable code.
- It is more testable.

Setting up the environment.

* Install nodejs (nodejs.org)
* node -v
* npm -v
* npm install -g @angular/cli → command line interface

→ g stands for installing globally

Angular Architecture.

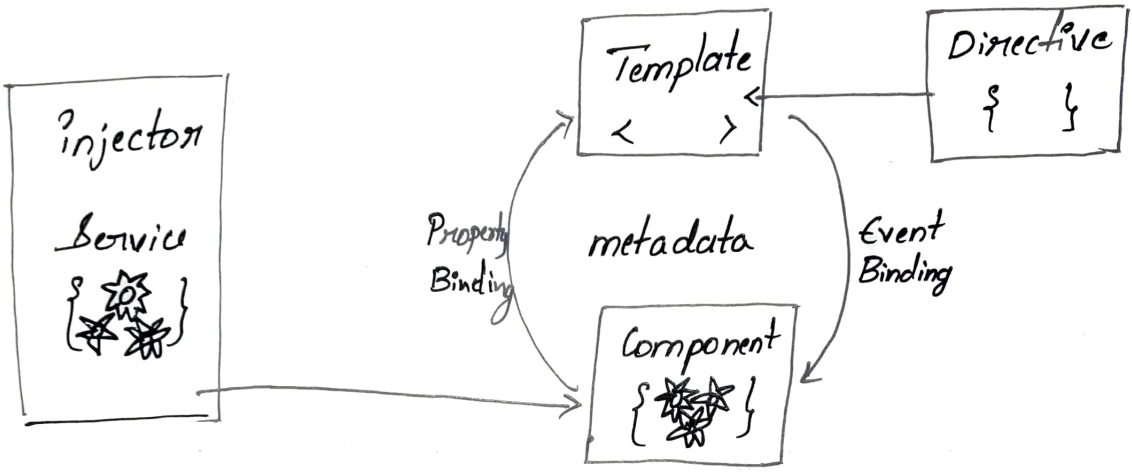
module component

module service

module value

module Fn

metadata



Creating Project in Angular

General Syntax :- ng new projectName

Example :- ng new helloApp.

Run the code :- ng serve.

- Why typescript?

Javascript started growing and it has lot of complex and heavy code due to which it does not full fill the requirement of object oriented programming language this prevents the Javascript from succeding at enterprise level.

* Typescript is used for client as well as server side technology. It full fills the gap of Javascript

What is typescript?

typescript is superset of Javascript that is any valid javascript code is also valid in typescript code. Typescript has additional features to secure and technology.

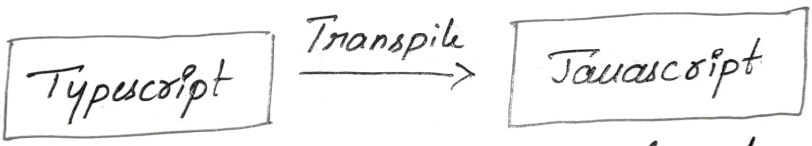
Features of typescript:-

- typescript code will be converted into plain Javascript code that is typescript code is not understantable by the browser that's why if the code is return in typescript it will be compiled and converted the code (JS)
- The above process of converting the typescript code into the Javascript code is called as Trans-piled.
- What ever code writen in the Javascript can be converted into typescript just by changing the extension from .js to .ts.

Difference between Typescript and Javascript.

Typescript	Javascript
- Typescript is also known as object oriented programming language.	- Javascript is a scripting language.
- Typescript support to modules	- Javascript does not support modules.
- Typescript has interface	- Does not have interface.
- Typescript checks the type of variable at compile time.	- Unlike it checks at the run-time.

Typescript.



Transpile:- The term transpile refers to converting of typescript into Javascript.

Environment setup of typescript.

* npm install -g typescript
* tsc --version.

↓

~~Transcript~~ compiler.
typescript

Example:-

main.ts

```
function printMsg(msg)
{
  console.log(msg)
}
var message = "Hello World"
printMsg(message)
```

ts to js →

main.js

```
function printMsg(msg)
{
  console.log(msg)
}
var message = "Hello world"
printMsg(musage)
```

procedure to compile and execute typescript file:-

* typescript code has to be written in .ts extension
* Inorder to compile typescript code we make use of

  tsc filename.ts.

* whenever we execute typescript file it will automatically generate a javascript file.
* Inorder to execute this code we make use of node filename.js.
* We cannot run typescript file directly on the browser that is the reason javascript file will be generated to execute it on browser.

Example 2:

2main.ts

```
var data = 10
data = "shanu" //error
console.log(data)
```

2main.js

```
var data = 10
data = "shanu"
console.log(data).
```

Error msg:- type shanu is string cannot be assigned to type number.

Datatypes in typescript:-

string
number
boolean

Example 3:-

3main.ts

```
let fname:string="Sachin"
let usn:number;
 usn=31
let present:boolean="true"//error
console.log(fname)
console.log(usn)
console.log(present)
```

3main.js

```
var fname="Sachin"
 var usn
 usn=31
var present=true.
```

o/p:- Sachin
31
true.

Example 4:-

4main.ts

```
for(let i=0;i<5;i++)
{
  console.log(i)
}
console.log(i)
```

4main.js

```
for(let i=0;i<5;i++)
{
  consolu.log(i)
}
consolu.log(i)
```

consolu:- 0
1
2
3
4
5

-> any is the super set of all datatypes it holds any type of the data.

Example

.ts

```
let a:any
a = "Shanu"
a = 20
a = true
a = false
console.log(a); //false
```

.js

```
var a;
a = "Shanu"
a = 20
a = "true"
a = false
console.log(a);
```

- If the variable declared with any datatype then any type of value can be assigned to that particular variable.

Example 5:-

5main.js

```
let a:any
a = "Shanu"
console.log(a)
```

Execution.

```
tsc 5main.ts
node 5main.js
Shanu.
```

Example 6:

6main.ts

```
let arr: number[] = [10, 20, 30, 40]
console.log (arr);
```

6main.js

```
Var arr = [10, 20, 30, 40]
console.log (arr);
```

Execution

```
tsc 6main.ts
node 6main.js
[10, 20, 30, 40].
```